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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,346	02/05/2002	Stanley C. Gianzero	1391-30200 DJK (2001-IP-0)	7621

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CONLEY ROSE, P.C.
P. O. BOX 3267
HOUSTON, TX 77253-3267

EXAMINER

AURORA, REENA

ART UNIT	PAPER NUMBER
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2862

DATE MAILED: 08/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/068,346

Applicant(s)

GIANZERO ET AL.

Examiner

Reena Aurora

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 4 - 6, 8 and 10 - 12 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 7 and 9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4 - 6, 8 and 10 - 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Segesman (4,360,777).
3. As to claims 1 and 6, Segesman discloses an apparatus and method for determining properties of subsurface formations surrounding a bore-hole by induction logging, the method including obtaining a first response signal from a first transmitter-receiver array (Tz, Rz) of antenna elements having magnetic dipoles oriented parallel to a tool axis (13); obtaining a second response signal from a second transmitter-receiver array (Tx, Rx) of elements having magnetic dipoles oriented perpendicular to the tool axis (13); combining the first and second response signals to obtain a combination response signal having enhanced vertical resolution (Fig. 1A, Column 4, Lines 15 – 30, Lines 50 – 61 and Column 8, Lines 12 - 25).
4. As to claim 8, Segesman discloses an apparatus and method for determining properties of subsurface formations surrounding a bore-hole by induction logging including a multi-axial tool configured to provide signals indicative of a vertical magnetic dipole response (Tz, Rz) and a horizontal magnetic dipole response (Tx, Rx); and a processor (228) coupled to the multi-axial induction tool and configured to determine a

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combined response from the vertical magnetic dipole horizontal magnetic dipole responses, wherein the combined response has a substantially rectilinear measurement profile (Fig. 1A, Column 4, Lines 15 – 30, Lines 50 – 61 and Column 8, Lines 12 - 25).

5. As to claims 4 and 5, Segesman discloses the first transmitter-receiver array (Tz, Rz) has antenna element placement substantially equal to antenna element placement of the second transmitter-receiver array (Tx, Rx) and the coils are of electrically conductive material (Fig. 1).

6. As to claims 10 -12, Segesman discloses processor (228, 230) determining a resistivity log of a formation from a combined response (Fig. 1A).

Allowable Subject Matter

7. Claims 2, 3, 7 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. As to claims 2 and 3, the prior art fails to perform a weighted summation of the first and second response signals, wherein the ratio of the weight of the first response signal to the weight of the second response signal is approximately minus three.

9. As to claim 7, the prior art fails to show the processing of the first response signal to determine a first apparent formation conductivity; processing the combination response signal to determine a second apparent formation conductivity; and combining the first and second apparent formation conductivities to determine a formation anisotropy.

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10. As to claim 9, the prior art fails to show a processor determining the combined response as a weighted sum of the vertical magnetic dipole response and the horizontal magnetic dipole response and wherein the relative weights of the vertical magnetic dipole and horizontal magnetic dipole responses are $3/2$ and $-1/2$ respectively.

Prior Art of Record

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gupta et al. (5,999,883) is cited for its disclosure of a method for determining an initial estimate of the horizontal conductivity and vertical conductivity of an anisotropic earth formation.

Kriegshauser et al. (6,466,872) is cited for its disclosure of a method for determination of apparent resistivities of anisotropic reservoirs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reena Aurora whose telephone number is 703-605-1372. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on 703-308-0750. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Reena Aurora



N. Le
Supervisory Patent Examiner
Technology Center 2800